



PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known

Application Number	10/808,117
Filing Date	March 24, 2004
First Named Inventor	Gunter
Art Unit	2882
Examiner Name	Unassigned
Attorney Docket Number	6301.00002

Sheet

of

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ²
		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>h</i>	1	A.C. Sauve, A.O. Hero, III, W.L. Rogers, S.J. Wilderman and N.H. Clinthorne, "3D Image Reconstruction for a Compton SPECT Camera Model," IEEE Transactions on Nuclear Science, Vol. 46, No. 6, pp. 2075-2084, December 1999	
<i>h</i>	2	C.E. Ordonez, W. Chang and Al. Bolozydyna, "Angular Uncertainties Due to Geometry and Spatial Resolution in Compton Cameras," IEEE Transactions on Nuclear Science, Vol. 46, No. 4, pp. 1142-1147, August 1999	
<i>h</i>	3	C.H. Hua, N.H. Clinthorne, S.J. Wilderman, J.W. LeBlanc and W.L. Rogers, "Quantitative Evaluation of Information Loss for Compton Cameras," IEEE Transactions on Nuclear Science, Vol. 46, No. 3, pp. 587-593, June 1999	
<i>B</i>	4	C.J. Solomon and R.J. Ott, "Gamma Ray Imaging with Silicon Detectors - A Compton Camera for Radionuclide Imaging in Medicine," Nuclear Instruments and Methods in Physics Research, A273, pp. 787-792 (1988)	
<i>B</i>	5	D. Doria and M. Singh, "Comparison of Reconstruction Algorithms for an Electronically Collimated Gamma Camera," IEEE Transactions on Nuclear Science, Vol. NS-29, No. 1, pp. 447-451, February 1982	
<i>B</i>	6	F. Biggs, L.B. Mendelsohn, J.B. Mann, "Hartree-Fock Compton Profiles for the Elements," Atomic Data and Nuclear Data Tables, Vol. 16, No. 3, pp. 201-206, September 1975	
<i>B</i>	7	G. Matscheko, G.A. Carlsson and R. Ribberfors, "Compton Spectroscopy in the Diagnostic X-Ray Energy Range. II Effects of Scattering Material and Energy Resolution," Phys. Med. Biol., Vol. 34, No. 2, pp. 199-208, September 1988	
<i>B</i>	8	J. Pauli, E.-M. Pauli, and G. Anton, "ITEM-QM Solutions for EM Problems in Image Reconstruction Exemplary for the Compton Camera," Nuclear Instruments and Methods in Physics Research, A488, pp. 323-331 (2002)	
<i>B</i>	9	J.B. Martin, G.F. Knoll, D.K. Wehe, N. Dogan, V. Jordanov, N. Petrick and M. Singh, "A Ring Compton Scatter Camera for Imaging Medium Energy Gamma Rays," IEEE Transactions on Nuclear Science, Vol. 40, No. 4, pp. 972-978, August 1993	
<i>B</i>	10	J.B. Martin, N. Dogan, J.E. Gormley, G.F. Knoll, M. O'Donnell and D.K. Wehe, "Imaging Multi-Energy Gamma-Ray Fields with a Compton Scatter Camera," IEEE Transactions on Nuclear Science, Vol. 41, No. 4, pp. 1019-1025, August 1994	
<i>B</i>	11	J.D. Kurfess, "Compton Scatter Imaging in Astrophysics," IEEE Transactions on Nuclear Science, Vol. 45, No. 3, pp. 936-942, June 1988	
<i>B</i>	12	J.D. Valentine, C. Bonnerave and R.C. Rohe, "Energy-Subtraction Compton Scatter Camera Design Considerations: A Monte Carlo Study of Timing and Energy Resolution Effects," IEEE Transactions on Nuclear Science, Vol. 44, No. 3, pp. 1134-1139, June 1997	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
B	13	J.E. Gornely, W.L. Rogers, N.H. Clinthorne, D.K. Wehe and G.F. Knoll, "Experimental Comparison of Mechanical and Electronic Gamma-Ray Collimation," Nuclear Instruments and Methods in Physics Research, A397, pp. 440-447 (1997)	
B	14	J.W. LeBlanc, N.H. Clinthorne, C. Hua, W.L. Rogers, D.K. Wehe, S.J. Wilderman, "A Compton Camera for Nuclear Medicine Applications Using ^{113m} IN," Nuclear Instruments and Methods in Physics Research, A422, pp. 735-739 (1999)	
B	15	J.W. LeBlanc, N.H. Clinthorne, C-H Hua, E. Nygard, W.L. Rogers, D.K. Weh, P. Weilhammer and S.J. Wilderman, "C-SPRINT: A Prototype Compton Camera System for Low Energy Gamma Ray Imaging," IEEE Transactions on Nuclear Science, Vol. 45, No. 3, pp. 943-949, June 1998	
B	16	J.W. LeBlanc, N.H. Clinthorne, C-H Hua, E. Nygard, W.L. Rogers, D.K. Wehe, P. Weilhammer, S.J. Wilderman, "Experimental Results from the C-SPRINT Prototype Compton Camera," IEEE Transactions on Nuclear Science, Vol. 46, No. 3, pp. 201-204, June 1999	
B	17	L.C. Parra, "Reconstruction of Cone-Beam Projections from Compton Scattered Data," IEEE Transactions on Nuclear Science, Vol. NS-47, pp. 1543-1550 (2000)	
B	18	M. Hirasawa, T. Tomitani and S. Shibata, "New Analytical Method for Three Dimensional Image Reconstruction in Multitracer Gamma-Ray Emission Imaging; Compton Camera for Multitracer," RIKEN Review No. 35, pp. 118-119, May 2001, Focused on New Trends in Bio-Trace Elements Research	
B	19	M. Singh and D. Doria "An Electronically Collimated Gamma Camera for Single Photon Emission Computed Tomography, Part II: Image Reconstruction and Preliminary Experimental Measurements," Medical Physics, Vol. 10, No. 4, pp. 428-435, July/August 1983	
B	20	M. Singh and D. Doria "Germanium-Scintillation Camera Coincidence Detection studies for Imaging Single Photon Emitters," IEEE Transactions on Nuclear Science, Vol. NS-31, No. 1, pp. 594-598, February 1984	
B	21	M. Singh and D. Doria "Single Photon Imaging with Electronic Collimation," IEEE Transactions on Nuclear Science, Vol. NS-32, No. 1, pp. 843-847, February 1985	
B	22	M. Singh and R.R. Brechner, Experimental Test-Object Study of Electronically Collimated SPECT," The Journal of Nuclear Medicine, Vol. 31, No. 2, pp. 178-186, February 1990	
B	23	M. Singh, "An Electronically Collimated Gamma Camera for Single Photon Emission Computed Tomography, Part I: Theoretical Considerations and Design Criteria," Medical Physics, Vol. 10, No. 4, pp. 421-427, July/August 1983	
B	24	M. Singh, R. Leahy, R. Brechner and T. Hebert, "Noise Propagation in Electronically Collimated Single Photon Imaging," IEEE Transactions on Nuclear Science, Vol. 35, No. 1, pp. 772-777, February 1988	
B	25	M.G. Scannavini, R.D. Speller, G.J. Royle, I. Cullum, M. Raymond, G. Halland G. Iles, "A Possible Role for Silicon Microstrip Detectors in Nuclear Medicine: Compton Imaging of Positron Emitters," Nuclear Instruments and Methods in Physics Research, A477, pp. 514-520 (2002)	
B	26	M.J. Cree and P.J. Bones, "Towards Direct Reconstruction from a Gamma Camera Based on Compton Scattering," IEEE Transactions on Medical Imaging, Vol. 13, No. 2, pp. 398-407, June 1994	
B	27	N. Dogan, K.D. Wehe and A.Z. Akcasu, "A Source Reconstruction Method for Multiple Scatter Compton Cameras", IEEE Transactions on Nuclear Science, Vol. 39, No. 5, pp. 1427-1430, October 1992	
B	28	N.H. Clinthorne, C. Ng, J. Strobel, C. Hua, J.W. LeBlanc, S.J. Wilderman and W.L. Rogers, "Determining Detector Requirements for Medical Imaging Applications," Nuclear Instruments and Methods in Physics Research, A489, pp. 501-507 (1998)	
B	29	N.H. Clinthorne, S.J. Wilderman, C. Hua, J.W. LeBlanc and W.L. Rogers, "Choice of Scattering Detector for Compton-Scatter Cameras," Journal of Nuclear Medicine, Vol. 39, No. 5, Proceedings of the 45 th Annual Meeting, Scientific Papers, No. 193, May 1998 Supplement	
B	30	P. von Ballmoos, R. Diehl, and V. Schönfelder, "Imaging the Gamma-Ray Sky with Compton Telescopes," Astronomy and Astrophysics, pp. 396-406, February 1989	
B	31	R. Basko, G.L. Zeng, and G.T. Gullberg, "Analytical Reconstruction Formula for One-Dimensional Compton Camera," IEEE Transactions on Nuclear Science, Vol. 44, No. 3, pp. 1342-1346, June 1977	
B	32	R. Basko, G.L. Zeng, and G.T. Gullberg, "Application of Spherical Harmonics to Image Reconstruction for the Compton Camera," Phys. Med. Biol. 43, pp. 887-894 (1998)	
B	33	R. Diehl, "The Comptel Experiment on the NASA Gamma-Ray Observatory," Space Science Reviews 49, pp. 85-106, June 1988	
B	34	R.A. Kroeger, W.N. Johnson, J.D. Kurfess and B.F. Philips, "Gamma Ray Polarimetry Using a Position Sensitive Germanium Detector," Nuclear Instruments and Methods in Physics Research, A436, pp. 165-169 (1999)	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>h</i>	35	R.C. Rohe and J.D. Valentine, "An Energy-Subtraction Compton Scatter camera Design for In Vivo Medical Imaging of Radiopharmaceuticals," IEEE Transactions on Nuclear Science, Vol. 43, No. 6, pp. 3256-3263, December 1996	
<i>h</i>	36	R.C. Rohe, M.M. Sharfi, K.A. Kecvar, J.D. Valentine and C. Bonnerave, "The Spatially-Variant Backprojection Point Kernel Function of an Energy-Subtraction Compton Scatter Camera for Medical Imaging," IEEE Transactions on Nuclear Science, Vol. 44, No. 6, pp. 2477-2482, December 1977	
<i>B</i>	37	R.R. Brechner and M. Singh, "Reconstruction of Electronically Collimated Images Obtained from Single Photon Emitters Using a Spherical System of Coordinates," IEEE Transactions on Nuclear Science, Vol. 33, No. 1, pp. 583-586, February 1986	
<i>A</i>	38	R.R. Brechner and Manbir Singh, "Iterative Reconstruction of Electronically Collimated Spect Images," IEEE Transactions on Nuclear Science, Vol. 37, No. 3, pp. 1328-1332, June 1990	
<i>h</i>	39	R.R. Brechner, M. Singh and R. Leahy, "Computer Simulated Studies of Tomographic Reconstruction with an Electronically Collimated Camera for Spect," IEEE Transactions on Nuclear Science, Vol. NS-34, No. 1, pp. 369-373, February 1987	
<i>h</i>	40	R.W. Todd, J.M. Nightingale and D.B. Everett, "A Proposed γ Camera," Nature, Vol. 251, pp. 132-134, September 1974,	
<i>h</i>	41	S.J. Wilderman, W.L. Rogers, G.F. Knoll and J.C. Engdahl, "Fast Algorithm for List Mode Back-Projection of Compton Scatter Camera Data," IEEE Transactions on Nuclear Science, Vol. 45, No. 3, pp. 957-962, June 1998	
<i>h</i>	42	T. Hebert, R. Leahy and M. Singh, "Three-Dimensional Maximum-Likelihood Reconstruction for an Electronically Collimated Single-Photon-Emission Imaging System," Optical Society of America, Vol. 7, No. 7, pp. 1305-1313, July 1990	
<i>h</i>	43	T. Kamae, N. Hanada and R. Enomoto, "Prototype Design of Multiple Compton Gamma-Ray Camera," IEEE Transactions on Nuclear Science, Vol. 35, No. 1, pp. 352-355, February 1988	
<i>h</i>	44	T. Kamae, R. Economoto and N. Hanada, "A New Method to Measure Energy, Direction, and Polarization of Gamma Rays," Nuclear Instruments and Methods in Physics Research, A260, pp. 254-257 (1987)	
<i>h</i>	45	T. Tomitani and M. Hirasawa, "Image Reconstruction from Limited Angle Compton Camera Data", Phys. Med. Biol. 47, pp. 2129-2145 (2002)	
<i>h</i>	46	V. Schönfelder, R. Diehl, G.G. Lichti, H. Steinle, B.N. Swanenburg, A.J.M. Deerenberg, H. Aarts, J. Lockwood, W. Webber, J. Macri, J. Ryan, G. Simpson, B.G. Taylor, K. Bennett and M. Snelling, "The Imaging Compton Telescope Compel on the Gamma Ray Observatory," IEEE Transactions on Nuclear Science, Vol. NS-31, No. 1, pp. 766-770, February 1984	
<i>h</i>	47	V. Schönfelder, U. Graser and R. Diehl, "Properties and Performance of the MPI Balloon Borne Compton Telescope," Astronomy and Astrophysics, pp. 138-151, February 1982	
<i>h</i>	48	Y.F. Yang, Y. Gono, S. Motomura, S. Enomoto, and Y. Yano, "Monte Carlo Simulations of the Performance of a Compton Camera Consisting of Position-Sensitive Germanium Detectors," Nuclear Instruments and Methods in Physics Research, A482, pp. 806-813 (2002)	

Examiner Signature	<i>[Signature]</i>	Date Considered	1/25/05
--------------------	--------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.